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Feeding behavior, morphological adaptations and burrowing in thalassinidean crustaceans

To better comprehend the impact of thalassinideans on the ecosystem and the degree of their bioturbating activities, it is essential to understand their life histories. The trophic habits of thalassindean shrimp are related to the morphology of their feeding appendages and digestive tract, as well as the architecture of their burrows. Filter and deposit feeding are the most important trophic mechanisms in this group. Within families, species with higher setal diversity may have a more generalist trophic behavior while the increasing presence of serrate setal types suggests deposit feeding as a prominent trophic mode. Delicate mandible morphology indicates a greater need for particle selection, being recorded usually in suspension or re-suspension feeders. Strong mandibles are commonly found in non-suspension feeders that feed directly on the sediment. Gastric mills with dense amounts of setae and complex dorsal teeth appear to indicate suspension feeding as the main trophic mechanism. Additionally, burrow architecture may also provide clues to the feeding habits of these crustaceans. For example; surface mounds and chambered burrows may indicate a deposit feeding behavior, while "U"-shaped tunnels and circular tunnel cross section suggest filter-feeding. The complexity of the trophic strategies of these crustaceans is only now beginning to be understood, the ability to forecast the feeding modes of a species based on morphology alone will need to be tested as more knowledge is accumulated.